

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P925733

Luminaire Tested: DFN2DIP-SQ3F0-120D060US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925733
REPORT IS A COMBINATION OF REPORTS P901433 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D060US950-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

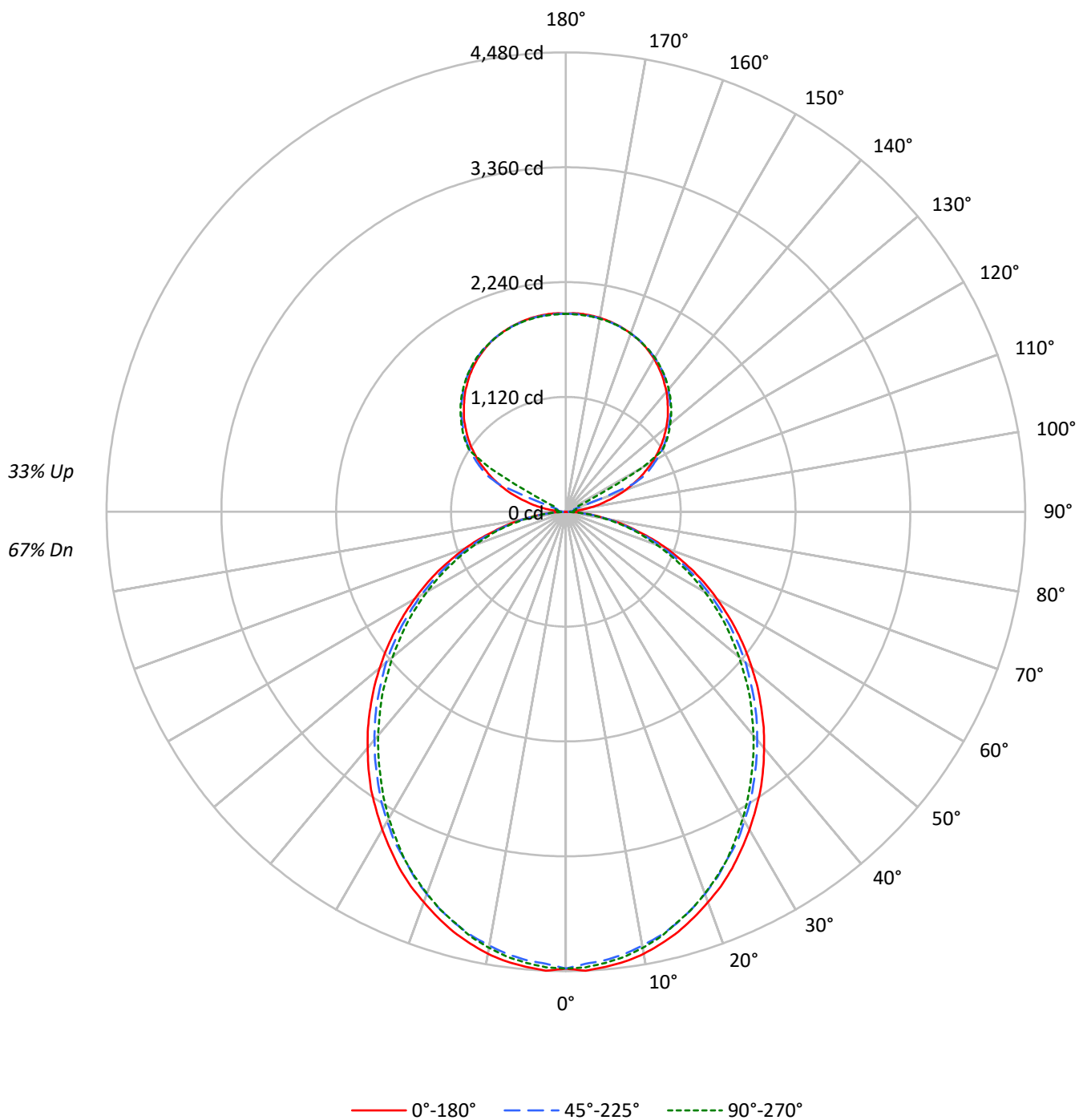
Lumens per Lamp: N/A
Luminaire Lumens: 17000.3 lumens
Efficiency: N/A
Efficacy: 99.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 170.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5104	5104	5104
5°	5109	5029	5065
10°	5064	4958	4995
15°	4986	4873	4886
20°	4883	4756	4775
25°	4779	4618	4646
30°	4650	4488	4483
35°	4528	4336	4311
40°	4378	4182	4147
45°	4228	4027	3979
50°	4064	3865	3785
55°	3892	3677	3606
60°	3697	3454	3401
65°	3485	3223	3159
70°	3213	2941	2898
75°	2839	2604	2654
80°	2386	2172	2194
85°	1680	1439	1436

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4228 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	419.3	2.5
10°-20°	1179.6	6.9
20°-30°	1733.6	10.2
30°-40°	2013.5	11.8
40°-50°	2011.0	11.8
50°-60°	1753.5	10.3
60°-70°	1296.2	7.6
70°-80°	733.4	4.3
80°-90°	197.0	1.2
90°-100°	63.7	0.4
100°-110°	237.5	1.4
110°-120°	629.8	3.7
120°-130°	1044.5	6.1
130°-140°	1109.5	6.5
140°-150°	1031.2	6.1
150°-160°	829.1	4.9
160°-170°	534.2	3.1
170°-180°	183.9	1.1
0°-30°	3332.5	19.6
0°-40°	5345.9	31.4
0°-60°	9110.4	53.6
0°-90°	11336.9	66.7
90°-120°	930.9	5.5
90°-150°	4116.2	24.2
90°-180°	5663.0	33.3
0°-180°	17000.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4454	4454	4454	4454	4454	
5°	4454	4438	4390	4424	4416	423
15°	4240	4215	4159	4176	4155	1194
25°	3838	3804	3731	3739	3731	1766
35°	3311	3268	3200	3174	3152	2068
45°	2694	2664	2600	2553	2536	2079
55°	2039	2013	1962	1910	1889	1823
65°	1375	1349	1306	1268	1247	1360
75°	719	711	689	664	673	768
85°	175	171	167	154	150	196
90°	1	17	28	35	38	16
95°	91	45	54	62	60	108
105°	425	467	85	101	106	454
115°	804	828	862	215	115	791
125°	1136	1155	1181	1191	1195	1014
135°	1406	1429	1441	1455	1452	1086
145°	1631	1630	1654	1663	1656	1020
155°	1796	1784	1800	1809	1798	828
165°	1893	1884	1888	1898	1888	535
175°	1936	1926	1929	1939	1925	184
180°	1932	1932	1932	1932	1932	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4454.5	4454.5	4454.5	4454.5	4454.5
2.5°	4480.4	4459.0	4411.8	4454.5	4446.3
5°	4454.5	4437.6	4390.4	4424.5	4416.3
7.5°	4424.5	4399.0	4351.8	4386.3	4377.7
10°	4377.7	4347.7	4296.3	4330.4	4317.7
12.5°	4313.1	4287.7	4236.3	4257.7	4249.0
15°	4240.4	4215.0	4159.1	4176.3	4155.0
17.5°	4150.5	4125.0	4069.1	4090.5	4069.1
20°	4051.8	4026.4	3966.4	3979.1	3962.3
22.5°	3953.7	3915.0	3859.1	3859.1	3850.5
25°	3837.8	3803.7	3731.0	3739.2	3731.0
27.5°	3709.2	3679.2	3623.8	3611.0	3589.7
30°	3581.0	3546.5	3482.4	3469.7	3452.4
32.5°	3443.7	3418.4	3349.7	3323.8	3306.6
35°	3311.0	3268.4	3199.7	3173.9	3152.5
37.5°	3161.1	3122.5	3053.8	3023.9	3002.5
40°	3007.1	2972.6	2903.9	2865.7	2848.5
42.5°	2857.1	2822.6	2754.4	2711.3	2685.8
45°	2694.4	2664.4	2599.8	2553.1	2535.8
47.5°	2535.8	2505.8	2437.2	2390.0	2364.5
50°	2368.6	2347.2	2287.2	2227.2	2205.8
52.5°	2205.8	2175.9	2120.5	2073.1	2043.2
55°	2039.1	2013.2	1961.8	1910.5	1889.1
57.5°	1871.8	1850.5	1794.6	1743.2	1726.0
60°	1704.6	1687.8	1627.8	1580.6	1567.8
62.5°	1542.0	1511.9	1469.3	1426.5	1409.2
65°	1375.2	1349.2	1306.5	1267.9	1246.6
67.5°	1203.9	1182.0	1143.8	1113.9	1096.6
70°	1045.2	1027.9	989.3	959.3	942.6
72.5°	882.5	865.3	843.9	814.0	801.2
75°	719.4	711.2	689.4	664.0	672.6
77.5°	573.9	556.7	548.1	535.3	522.6
80°	428.5	424.0	415.4	402.7	394.0
82.5°	291.3	291.3	287.2	270.0	270.0
85°	175.4	171.3	167.2	154.1	150.0
87.5°	77.3	68.6	60.0	47.2	42.7
90°	1.3	16.8	27.9	35.0	37.7
92.5°	35.0	29.4	33.5	36.3	37.7
95°	90.8	44.6	54.5	61.6	60.1
97.5°	163.5	48.9	71.2	75.6	76.9
100°	247.5	55.9	79.7	90.8	93.6
102.5°	339.6	337.0	82.5	97.8	102.1
105°	424.9	466.9	85.3	100.6	106.3
107.5°	524.2	559.0	88.1	103.4	109.0
110°	619.3	648.5	244.7	104.9	110.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	708.7	733.8	710.1	107.5	111.9
115°	803.7	827.5	862.5	215.3	114.7
117.5°	886.2	914.1	938.0	738.0	371.8
120°	978.5	999.4	1024.7	1041.4	852.7
122.5°	1056.7	1079.1	1107.1	1115.4	1116.9
125°	1136.4	1154.6	1181.1	1191.0	1195.1
127.5°	1209.1	1228.7	1249.7	1263.7	1265.0
130°	1277.6	1300.0	1315.3	1330.7	1329.4
132.5°	1347.5	1365.7	1381.0	1393.6	1392.3
135°	1406.3	1428.7	1441.1	1455.2	1452.4
137.5°	1467.6	1484.4	1498.5	1512.5	1508.4
140°	1527.7	1539.1	1554.4	1566.9	1560.0
142.5°	1578.2	1588.0	1606.2	1617.2	1610.3
145°	1631.3	1629.8	1653.6	1663.4	1656.4
147.5°	1677.3	1673.1	1696.9	1703.8	1698.4
150°	1722.2	1712.3	1734.8	1743.1	1736.1
152.5°	1759.8	1748.7	1769.6	1778.1	1768.2
155°	1796.2	1783.7	1800.5	1808.8	1797.6
157.5°	1825.6	1814.4	1827.0	1836.8	1825.6
160°	1850.8	1842.3	1850.8	1859.1	1849.3
162.5°	1873.0	1864.7	1871.7	1881.5	1868.9
165°	1892.6	1884.3	1888.4	1898.3	1888.4
167.5°	1908.0	1899.6	1903.9	1913.7	1901.0
170°	1920.7	1912.2	1915.1	1924.8	1912.2
172.5°	1929.0	1920.7	1923.5	1933.3	1920.7
175°	1936.0	1926.1	1929.0	1938.7	1924.8
177.5°	1938.7	1929.0	1930.4	1940.2	1927.7
180°	1931.8	1931.8	1931.8	1931.8	1931.8

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	14.31	15.35	15.11	16.17	17.18	13.87	14.90	14.67	15.73	16.74
	3H	15.98	16.91	16.79	17.74	18.78	15.49	16.42	16.30	17.25	18.29
	4H	16.58	17.45	17.40	18.29	19.34	16.08	16.96	16.91	17.80	18.85
	6H	16.98	17.79	17.82	18.64	19.70	16.48	17.29	17.32	18.14	19.20
	8H	17.09	17.86	17.94	18.73	19.79	16.59	17.36	17.44	18.22	19.29
	12H	17.14	17.88	18.00	18.74	19.83	16.63	17.37	17.49	18.23	19.32
4H	2H	14.79	15.67	15.63	16.51	17.56	14.44	15.31	15.27	16.15	17.20
	3H	16.67	17.40	17.51	18.27	19.34	16.26	16.99	17.11	17.87	18.93
	4H	17.39	18.05	18.24	18.92	20.02	16.96	17.63	17.82	18.50	19.59
	6H	17.91	18.48	18.78	19.38	20.47	17.47	18.05	18.35	18.95	20.04
	8H	18.06	18.60	18.93	19.49	20.60	17.62	18.16	18.50	19.05	20.16
	12H	18.14	18.62	19.03	19.53	20.65	17.69	18.17	18.58	19.08	20.20
8H	4H	17.59	18.13	18.47	19.02	20.13	17.21	17.75	18.09	18.64	19.75
	6H	18.22	18.67	19.13	19.60	20.71	17.84	18.29	18.75	19.22	20.33
	8H	18.44	18.84	19.36	19.76	20.89	18.05	18.45	18.97	19.37	20.50
	12H	18.58	18.93	19.50	19.84	21.02	18.17	18.52	19.09	19.43	20.61
12H	4H	17.58	18.07	18.48	18.98	20.09	17.22	17.70	18.11	18.61	19.73
	6H	18.25	18.65	19.17	19.57	20.70	17.88	18.28	18.80	19.20	20.33
	8H	18.50	18.85	19.42	19.76	20.94	18.12	18.47	19.04	19.38	20.56